Representation of ...

$\because$ Group $U(n) \cong \mathbb{Z}_{\phi(n)}$

$U(n) = \{x \; ; \; \gcd(x,n) = 1\}$

$U(4) = \{1, 3\}$

$U(5) = \{1, 2, 3, 4\}$

$U(6) = \{1, \cancel{4}, 5\}$

$U(8) = \{1, 3, 5, 7\}$

$\because U(4) \cong \mathbb{Z}_{\phi(4)} = \mathbb{Z}_2$

$U(5) \cong \mathbb{Z}_4$

$U(6) \cong \mathbb{Z}_3$

all are cyclic

$U(8) \cong \mathbb{Z}_{\phi(8)}$

$\because 1^1 = 1 \; ; \; O(1) = 1$

$3^1 = 3$

$3^2 = 9 \cong 1 \pmod 8$

$O(3) = 2$

$5^1 = 5$

$5^2 = 24 \cong 1 \pmod 8$

$; \; 7^1 = 7$

$7^2 = 49 \cong 1 \pmod 8$

$O(7) = 2$

So in $U(8)$ $\nexists$ any element which order is equal to order of the group

i.e. $\nexists$ any element of order 4